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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,271	09/28/2006	Cong Xiao	27604U	5016
20529	7590	09/24/2009	EXAMINER	
THE NATH LAW GROUP 112 South West Street Alexandria, VA 22314				LETTMAN, BRYAN MATTHEW
ART UNIT		PAPER NUMBER		
3746				
MAIL DATE			DELIVERY MODE	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/588,271	XIAO, CONG	
	Examiner	Art Unit	
	Bryan Lettman	3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 04 August 2006.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-5 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-5 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 04 August 2006 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____.	6) <input type="checkbox"/> Other: _____ .

DETAILED ACTION

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 1.

The drawings are objected to under 37 CFR 1.83(a) because they fail to show a dragging rod as described in the specification and in claim 2. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

A substitute specification in proper idiomatic English and in compliance with 37 CFR 1.52(a) and (b) is required. The substitute specification filed must be accompanied by a statement that it contains no new matter.

The disclosure is objected to because of the following informalities: The specification contains reference numerals not in the drawings, as detailed above. Appropriate correction is required.

Claim Objections

Claims 1-5 are objected to because of the following informalities:

Claims must be written as a single sentence with semi-colons separating lines of claim limitations. Claim 1 contains multiple sentences.

In line 1 of claim 2, "grating R(4)" should be changed to "grating ruler (4)."

In line 2 of claim 3, proper articles should be added before claim limitations. The examiner suggests the following language: said dragging mechanism (2) also includes a servo motor (22), a belt gear (21), a lead screw (23) and a lead screw nut (25).

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, lines 2-3 are the limitations of “an unilateral inlet valve (8) and an unilateral outlet valve (7).” In claim 1, lines 3-4 are the limitations of “two unilateral inlet valves (8) and two unilateral outlet valves (7).” The examiner notes that in further interpretation of the claims it is assumed that there are two inlet and to outlet valves.

See rejection below for suggested claim language.

Claim 2 recites the limitation "the dragging rod" in line 2. There is insufficient antecedent basis for this limitation in the claim.

In claim 3, line 3 it is unclear what is meant by “which is in turn connected.” The examiner suggests changing this to “which are mechanically connected such that the servo motor turns the belt gear which rotates the lead screw, which moves the lead screw nut.”

In claim 4, lines 1-3 it is unclear what is meant by “a casing pipe (6) of lead screw connected with the mentioned piston (9) is set at the outside of mentioned lead screw (23).” The examiner notes that in further interpretation of the claims it is assumed that what is meant is “a casing pipe (6) connected with the lead screw and with the piston (9) is independent of said lead screw (23).”

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by

U. S. Patent 2,552,703 to Alonso.

Alonso discloses a pump comprising:

a volume tube (78) provided with metering volume section (87, 104);

a dragging mechanism (shown in Fig. 1);

two unilateral inlet valves (112) and two unilateral outlet valves (113) provided in two ends of inner wall thereof respectively;

a piston (79) connected to the said dragging mechanism (via 65) is provided in said volume tube (78); and

a grating ruler (49 is provided with teeth that effectively operate as a grating ruler by indicating the travel of the dragging mechanism) is also set on the moving route of a dragging rod (52) of said piston (78).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 3, 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent 2,552,703 to Alonso in view of U. S. Patent 5,567,122 to Schulte.

Alonso teaches all the limitations of claim 1, as detailed above, but doesn't teach a lead screw. Schulte teaches a pump wherein:

a dragging mechanism (shown in Fig. 2) also includes a servo motor (col. 3, lines 42-46), a belt gear (48a, col. 3, line 48), a lead screw (24) and a lead screw nut (22), which are mechanically connected;

a casing pipe (15) connected with the lead screw (24) and with a piston (19) is independent of said lead screw (24); and

said dragging mechanism (shown in Fig. 2) includes a linear motor (col. 3, lines 42-46).

It would be obvious to one of skill in the art, at the time of invention, to modify the pump taught by Alonso with the dragging mechanism taught by Schulte in order to increase the accuracy of the volume of fluid pumped.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bryan Lettman whose telephone number is (571) 270-7860. The examiner can normally be reached on Monday - Thursday between 9:00 am and 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on (571) 272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/B. L./
Examiner, Art Unit 3746

/Devon C Kramer/
Supervisory Patent Examiner, Art
Unit 3746